



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,542	01/23/2001	Amir Chaboki	1657.37US01	3023

24113 7590 11/25/2002

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.
4800 IDS CENTER
80 SOUTH 8TH STREET
MINNEAPOLIS, MN 55402-2100

EXAMINER

TUDOR, HAROLD JAY

ART UNIT PAPER NUMBER

3641

DATE MAILED: 11/25/2002

Remail 3/24/03

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY Office Action Summary

Application

767,542

Applicant(s)

Chahoki et al

Examiner

Tudor, H.J.

Art Unit

3641

Confirmation

- The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 7-26-02
- ☐ This action is FINAL.
- ☒ This action is non-final.
- ☐ Since this application is in condition for allowance except for the formal matters, prosecution as to the merits is close accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-43 is/are pending in this application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-15, 17-43 is/are rejected.
- ☐ Claim(s) 16 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved or ☐ disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.
- ☐ The drawing(s) filed on _____ is/are ☐ accepted or ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. §§ 119 and 120:
 - ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- *Certified copies not received:

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- ☐ The translation of the foreign language provisional application has been received.
- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
- ☒ Notice of References Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Art Unit: 3641

1) The indicated allowability of claims 1-15, 19-20, 22-26, and 29-37 is withdrawn in view of the following rejections.

2) Thiesen and Ross have been added.

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4) Claims 25, 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25, 27, and 28 are vague and indefinite in that they recite "the anode and the cathode" while claim 22 recites a plurality of plasma injectors wherein each injector has a cathode and an anode. It is noted that the embodiment of Fig.7 has an anode 330, cathodes 332 and intermediate electrodes 334.

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Art Unit: 3641

6) Claims 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by either Schneider et al or Marinas et al.

Figures 2 and 3 of Schneider et al disclose a plasma generator wherein the generated plasma is directed along axes, through holes 62 and 64, which are aligned with the central axis of the generator. Marinas et al disclose, in Fig.2, a plasma generator wherein the generated plasma is directed along axes, through holes 61 and 63 aligned with the central axis of the generator.

7) Claims 17, 38, 41, and 42 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Lindblom et al 5,767,439.

Lindblom et al clearly disclose the claimed invention in Fig. 2.

8) Claims 1,2,9,12,14,22,25,29,31 and 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Brunet et al.

Brunet et al disclose, in Fig.5 a cartridge comprising a stub casing 18, a casing 16, and a plasma injector assembly comprising a plurality of plasma injectors, each injector comprises an anode, a cathode, a tube and a wire connecting the anode and the cathode, note Fig. 1. Each injector is aligned along a planar depth that is transverse to the central axis. With respect to claim 9, Brunet et al clearly disclose the claimed invention in Fig.4.

9) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 3641

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10) Claims 23, 24 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunet et al.

Lines 6-8 of col. 7 state that the components can be controlled simultaneously to ignite the propellant charge 17. It would have been an obvious design choice to one having ordinary skill in the art at the time the invention was made to connect the injectors in parallel or series, and to vary the characteristics of the plasma injectors so that they ignite the propellant charge within 1-2 milliseconds.

11) Claims 3-11, 15, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brunet et al in view of Hershkowitz et al.

Brunet et al are applied as above. However, Brunet et al do not disclose at least one aperture in the tube of the plasma injector. Hershkowitz et al teach that it is old and well known in the art to employ apertures in the tube of a plasma injector to provide for uniform ignition of a propellant charge. To employ apertures in the tubes of the plasma injectors of the Brunet et al munition to provide for uniform ignition of the propellant charge, as taught by Hershkowitz, et al, would have been obvious to one having ordinary skill in the art at the time the invention was made. It would have been an obvious design choice to one having ordinary skill in the art at the time the invention was made to have the axis of some of the apertures in alignment with the central axis of the munition.

Art Unit: 3641

12) Claims 19 and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Lindblom et al 5,767,439.

Lindblom et al disclose the invention substantially as claimed in Fig. 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the position of the projectile in the munition and to vary characteristics of the plasma injector so that it ignites the propellant charge within 1-2 milliseconds.

13) Claims 1,2,12-14,17-20, 22-25, 29-31, and 33-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiesen in view of Brunet et al.

Thiesen discloses, in Fig.4, the invention substantially as claimed. The ignitor 9' extends into the munition about 13 percent of the length of the munition and the projectile extends into the propellant space for a length of about 70% of the length of the propellant space. However, Thiesen does not disclose a plasma injector assembly for igniting the propellant. Brunet et al teach, in Fig. 5a, an art recognized ignitor for a munition comprising a plurality of plasma injectors, each injector comprises an anode, a cathode, a tube and a wire connecting the anode and the cathode. Each injector is aligned along a planar depth that is transverse to the central axis. Brunet et al also disclose an injector 1 ex that is aligned with the axis of the munition. To employ the injector assembly of Brunet et al in the Thiesen munition would have been obvious to one having ordinary skill in the art at the time the invention was made. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the

Art Unit: 3641

position of the projectile in the munition and to vary characteristics of the plasma injector so that it ignites the propellant charge within 1-2 milliseconds.

14) Claims 3-11, 15, 21, 26 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiesen in view of Brunet et al and Hershkowitz et al.

References are applied as above. To employ apertures in the tubes of the plasma injectors of the munition formed by the combination of Thiesen and Brunet et al to provide for uniform ignition of the propellant charge, as taught by Hershkowitz, et al, would have been obvious to one having ordinary skill in the art at the time the invention was made. It would have been an obvious design choice to one having ordinary skill in the art at the time the invention was made to have the axis of some of the apertures in alignment with the central axis of the munition.

15) Claim 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16) Claims 27 and 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17) Applicant's arguments have been carefully considered but they are most in view of the new grounds of rejection.

18) Ross is cited as being of interest in that it discloses a munition having a plasma injector having an axis which is transverse to the central axis of the munition.

Art Unit: 3641

19) Any inquiry concerning this communication should be directed to Harold Tudor at telephone number (703) 306-4172.

A handwritten signature in black ink that reads "Harold Tudor". The signature is written in a cursive style with a large, stylized 'H' and 'T'.

HAROLD J. TUDOR
PRIMARY EXAMINER

tudor/jcs
10/31/02